Walber Hugo de Brito

Curriculum Vitae

Date of birth: March 27, 1988
Place of birth: Uberlândia, Brazil
Citizenship: Brazilian

Address

Condensed Matter Physics
and Materials Science Department
Brookhaven National Laboratory
Upton, NY, USA

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Education

2016 Ph.D. in Physics, Federal University of Minas Gerais (UFMG), Brazil
Title: *Emergent Properties from first principles: d^0 magnetism and metal-insulator transitions*
Thesis advisors: Prof. Helio Chacham and Prof. Maria Carolina de Oliveira Aguiar
Thesis defense date: March 7, 2016

2014 Exchange experience (for one year, during Ph.D. studies)
Department of Physics and Astronomy
Rutgers, The State University of New Jersey, USA
Supervisor: Prof. Kristjan Haule

2011 M.S. in Physics, Federal University of Uberlândia (UFU), Brazil
Title: *Adsorption and incorporation of impurities in extended defects in graphene*
Thesis advisor: Prof. Roberto Hiroki Miwa

2009 B.S. in Physics, Federal University of Uberlândia (UFU), Brazil
Scientific advisor: Prof. Roberto Hiroki Miwa

Employment

2016 – present Postdoctoral research associate
Condensed Matter Physics and Materials Science Department
Brookhaven National Laboratory, USA

2012 – 2016 CNPq Ph.D. Scholarship
Department of Physics
Federal University of Minas Gerais, Brazil

2010 – 2011	CAPES M.S. Scholarship Federal University of Uberlândia, Brazil
2007 – 2009	CNPq undergraduate scholarship Federal University of Uberlândia, Brazil

Areas of research experience

- Electronic structure calculations
- Strongly correlated materials
- Metal-insulator transitions
- Electronic structure of transition metal oxides
- Electronic and magnetic properties of carbon-based materials

Publications

1. W. H. Brito, M. C. O. Aguiar, K. Haule, and G. Kotliar, *Metal-Insulator transition in VO_2: a DFT+DMFT perspective*, Phys. Rev. Lett. **117**, 056402 (2016).
2. W. H. Brito, J. Silva-Araújo, and H. Chacham, *Magnetic Properties of C-N planar structures: d^0 ferromagnetism and half-metallicity*, Phys. Chem. Chem. Phys. **17**, 31995 (2015).
3. W. H. Brito, J. Silva-Araújo, and H. Chacham, *g-C_3N_4 and Others: Predicting New Nanoporous Carbon Nitride Planar Structures with Distinct Electronic Properties*, J. Phys. Chem. C **119**, 19743 (2015).
4. W. H. Brito, H. Chacham, R. Kagimura, R. H. Miwa, *Electronic confinement in graphene ruled by N doped extended defects*, Nanotechnology **25**, 245706 (2014).
5. W. H. Brito, R. Kagimura, R. H. Miwa, *B and N doping in graphene ruled by grain boundary defects*, Phys. Rev. B **85**, 035404 (2012).
6. W. H. Brito, R. Kagimura, R. H. Miwa, *Hydrogenated grain boundaries in graphene*, Appl. Phys. Lett. **98**, 213107 (2011).
7. W. H. Brito and R. H. Miwa, *Adsorption and diffusion of gold adatoms on graphene nanoribbons: an ab initio study*, Phys. Rev. B **82**, 045417 (2010).
8. W. H. Brito, R. A. Silva, and R. H. Miwa, *Gold adatoms and clusters on PPV: an ab initio investigation*, J. Chem. Phys. **133**, 204703 (2010).

Conferences and workshops - Communications

- W. H. Brito, M.C.O. Aguiar, K. Haule, and G. Kotliar, *Metal-Insulator transition in VO_2 and NbO_2: a DFT+DMFT perspective*, XXXVIII Brazilian Physical Society Meeting, 2015, Foz do Iguaçu, Brazil.
- W. H. Brito, J. Silva-Araújo, and H. Chacham, *Stability and Electronic Properties of graphene-like Carbon Nitride Structures*, 17^{th} Brazilian Workshop on Semiconductor Physics, 2015, Uberlândia, Brazil.
- W. H. Brito and R. H. Miwa, *BCN formation in grain boundaries of graphene*, 15^{th} Brazilian Workshop on Semiconductor Physics, 2011, Juiz de Fora, Brazil.
- W. H. Brito and R. H. Miwa, *h-BN formation in grain boundaries of graphene*, Advanced School on Computational Materials Science For Energy and Environmental Applications, 2011, São Paulo, Brazil.
- W. H. Brito and R. H. Miwa, *Adsorption of gold on zigzag and armchair graphene nanoribbons: an ab initio study*, XXXII Brazilian Physical Society Meeting, 2009, Águas de Lindóia, Brazil.
- W. H. Brito and R. H. Miwa, *Gold adatoms and clusters on PPV: an ab initio investigation*, XXXI Brazilian Physical Society Meeting, 2008, Águas de Lindóia, Brazil.

Conferences, workshops and schools - participation

- XXXVIII Brazilian Physical Society Meeting, 2015, Foz do Iguaçu, Brazil.
- 17^{th} Brazilian Workshop on Semiconductor Physics, 2015, Uberlândia, Brazil.
- Autumn School on Correlated Electrons: Emergent Phenomena in Correlated Matter, 2013, Jülich, Germany.
- 6^{th} I2CAM-FAPERJ Spring School New Perspectives in Quantum Matter, 2013, Rio de Janeiro, Brazil.
- 15^{th} Brazilian Workshop on Semiconductor Physics, 2011, Juiz de Fora, Brazil.

- Advanced School on Computational Materials Science For Energy and Environmental Applications, 2011, São Paulo, Brazil.
- XXXII Brazilian Physical Society Meeting, 2009, Águas de Lindóia, Brazil.
- XXXI Brazilian Physical Society Meeting, 2008, Águas de Lindóia, Brazil.